

Specialty Crops - Beans: **Satisfying, Satiating & Sustainable**

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The UN declared 2016 the International Year of Pulses.



Source: <http://www.fao.org/pulses-2016/en/>

- Low water and nutrient requirement.
- Improve growth and yield of following/with crops.
- Improve protein intake in poor countries and vegan diet.
- Atmospheric Nitrogen Fixation.



Hawaii Department of Agriculture (HDOA): Specialty Crop Block Grants



*Evaluating the suitability of Chickpea (*Cicer arietinum* L.) as a new legume crop to the tropical condition of Hawaii.*



Importance of Legume Crops:

- **Nutritional Benefits:**

Rich in protein, carbohydrates, fiber & nutrient.

- **Soil Benefits:**

Fix atmospheric nitrogen, Increase soil organic matter & Improve soil physical properties.

- **Crop Benefits:**

Intercropping, increase nutrient availability, suppress weeds.

- **Animal Feed:**

Recommended to be mixed with other feed up to 20%.



Symbiotic Relation with Rhizobia:



Rhizobium
Bacteria
Nodules.



Value-Added Products:



Chickpea snacks produced locally on Maui.

Hummus



Falafel



Tempeh from Adzuki



Pickled Chickpea



Consumption/dishes:

Curry



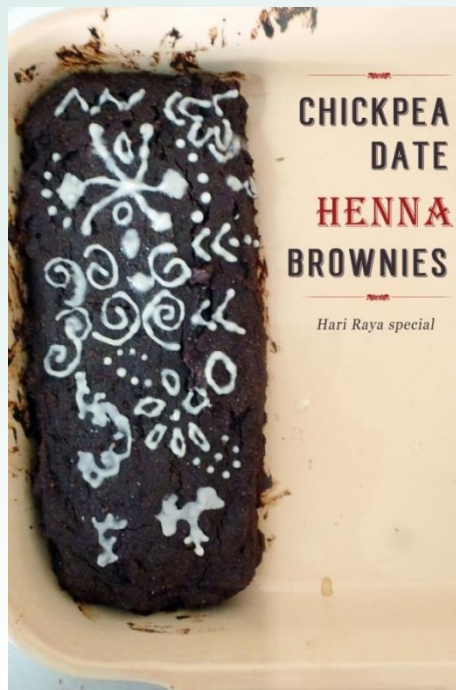
Chickpea soup



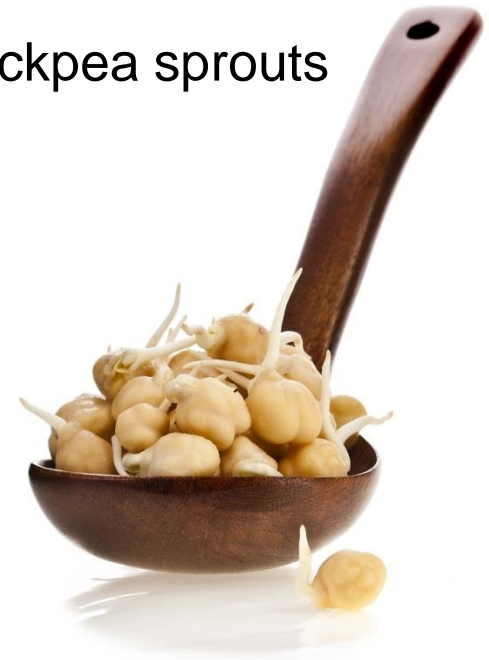
Chickpea and potato



Chickpea burger



Chickpea sprouts



Six locations on Five Islands:

3 locations within Maui County (2 on Maui and 1 on Molokai) and a location on Oahu, Big Islands and Kauai.



11 variety were obtained from the USDA-ARS and MSU. 15 genotype were obtained from NPGS. 20 genotype receive recently from ICRISAT.

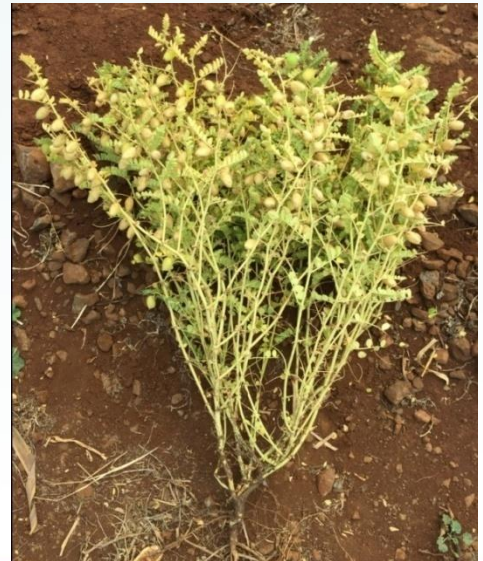
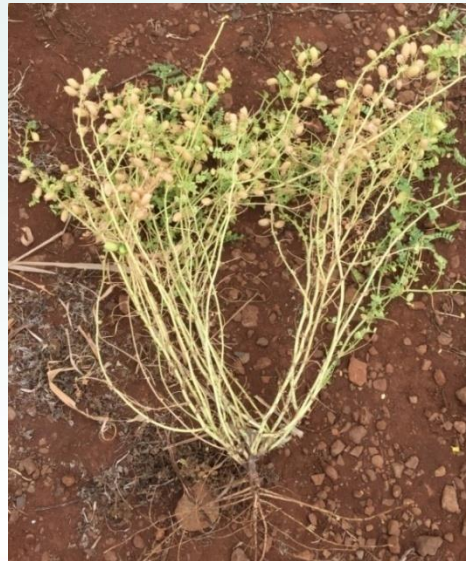


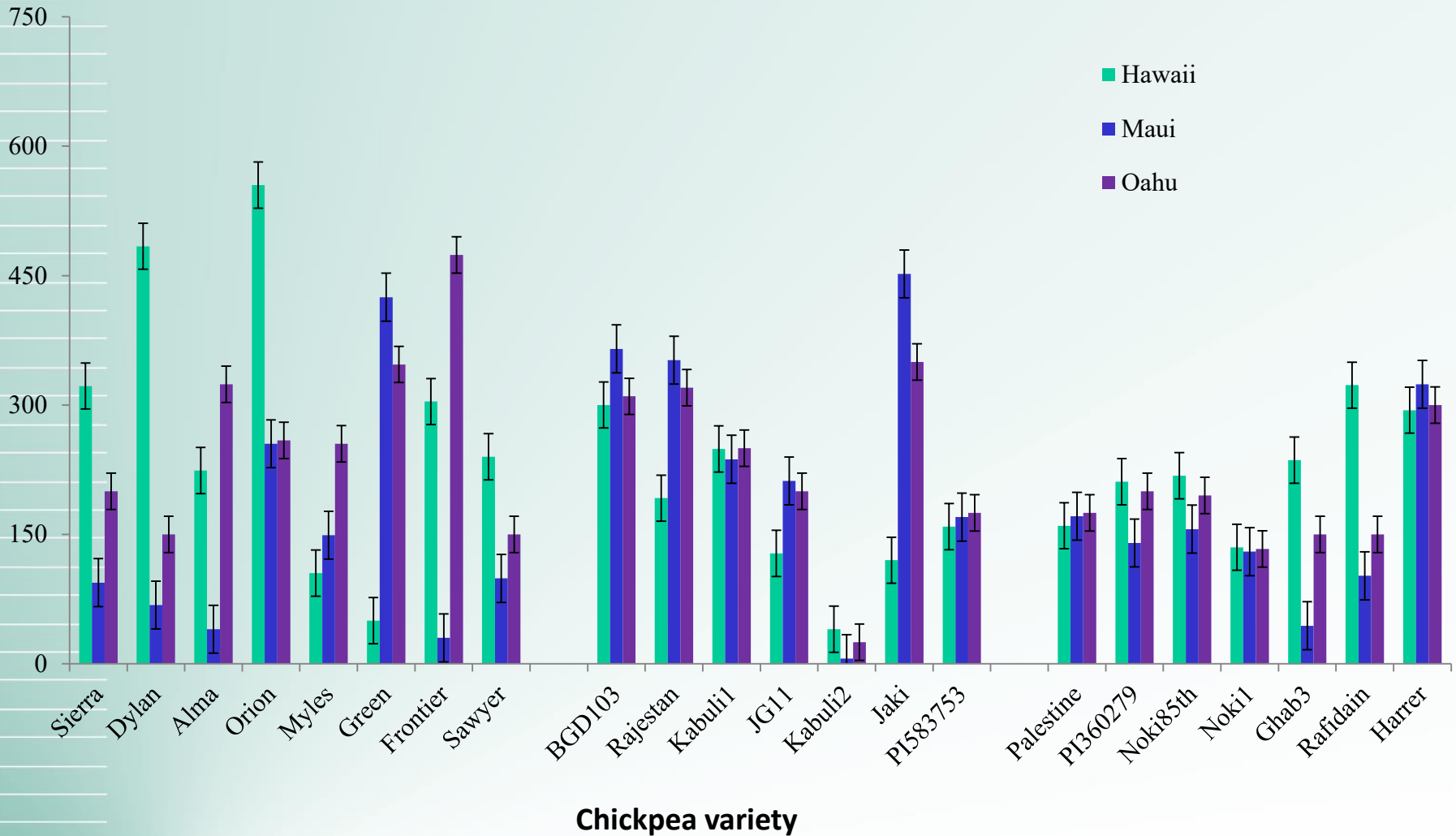
Chickpea diseases:

- **Ascochyta blight and Fusarium**
- **Root-knot nematode**
- **Mealybugs.**
- **Caterpillars.**



Chickpea Harvest/Yield:

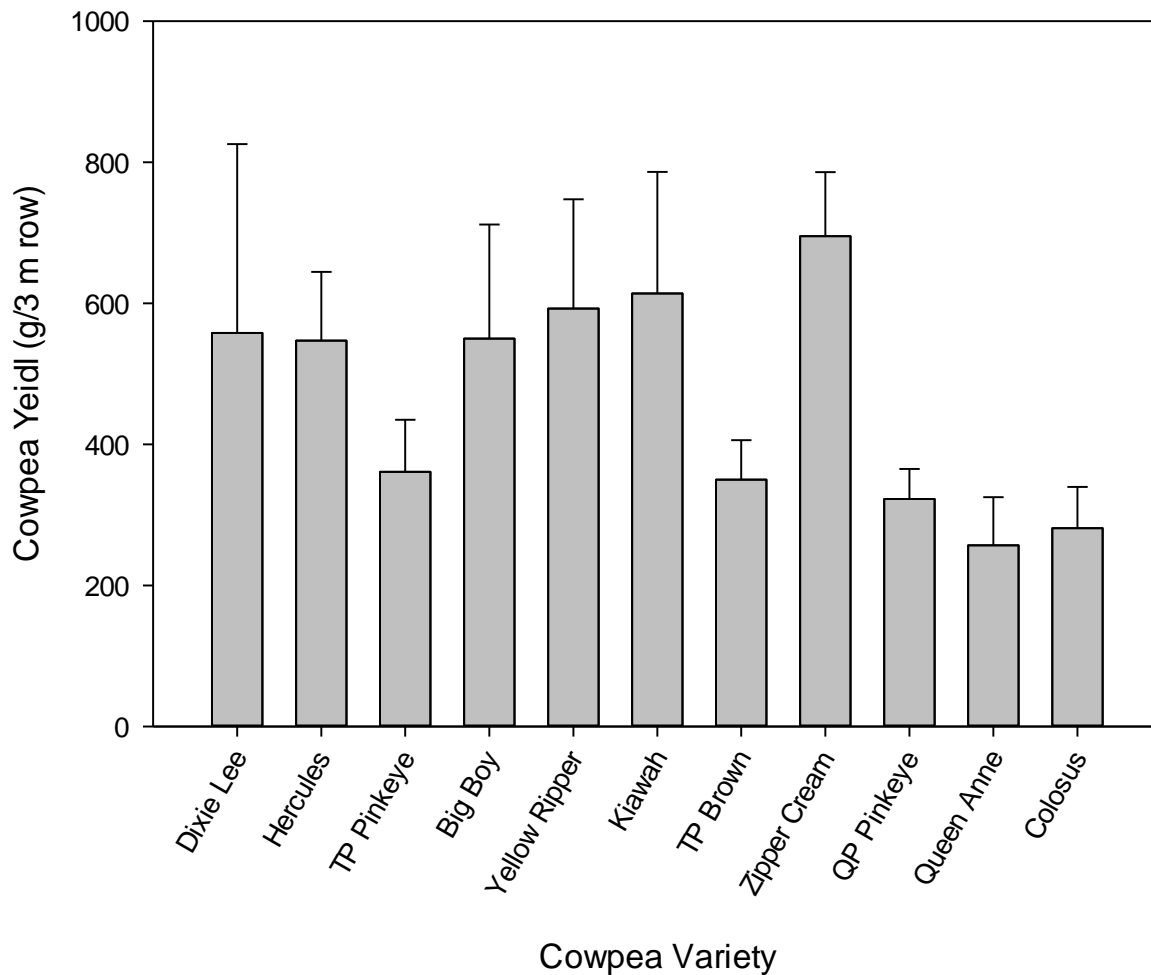




Average yield of 22 chickpea variety (all locations - Feb. planting).



New Project: Cowpea, Pinto & Adzuki bean:



Acknowledgements

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-HDOA

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-Hatch



Department of Agriculture

STATE OF HAWAII



Thanks for listening

